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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: **TAUBER et. al**
Application Serial No.: **10/783,293**
Application Filed: **February 18, 2004**
Attorney Docket No.: **CECOM 5523**
For: **RARE EARTH METAL COMPOUNDS FOR USE IN HIGH CRITICAL TEMPERATURE JOSEPHSON JUNCTIONS**

Sir:

These Remarks are submitted in support of amending the above-identified application.

REMARKS

Claims 49 and 80-84 are now in the case, with claims 1-48 and 50-79 having been withdrawn.

Separate Amendments To The Claims, Amendments To The Specification and these Remarks are enclosed with this Amendment.

This Amendment responds to the first non-final Office Action in the case wherein the Examiner objected to the specification paragraph concerning status of continuing applications and rejected claims 49 and 80-84 under 35 USC § 112 first and second paragraphs for indefiniteness and failing to comply with the written description requirement by containing new matter.

Each objection, rejection and response is set forth in more detail below. The present Amendment updates the specification paragraph concerning continuing applications and revises and clarifies claims 49 and 80-84 to make them more definite to clearly describe the invention as mandated by 35 U.S.C. § 112, without adding prohibited new matter. It is respectfully submitted that the specification and claims, as amended, have been rewritten to overcome and obviate the Examiner's objection and rejection. It is respectfully requested that the Examiner reconsider the objection and rejection and that the claims, as amended, be allowed and pass to issue.

The Amendments To The Specification updates the specification paragraph concerning the status of continuing applications by indicating which applications have been patented, abandoned or are still pending and the terminology "as a continuation in part" has been replaced

with "which was a continuation in part," for the sake of clarity.

The Examiner rejected claims 80-84 under 35 USC § 112, second paragraph, for indefiniteness because the claims recite "buffered layer" when "buffer layer" was intended. Claims 82-84 have been revised by replacing the term "buffered" with "buffer." It is respectfully submitted that clarifying the terminology in this way overcomes and obviates the Examiner's 35 U.S.C. § 112, second paragraph rejection and makes claims 82-84 more definite to particularly point out and distinctly claim the subject matter of the invention, as mandated by 35 U.S.C. § 112, without adding prohibited new matter.

The Examiner also rejected claims 49 and 80-84 under 35 USC § 112, first paragraph, for failing to comply with the written description requirement by containing new matter. The Examiner stated that claim 49's recital of a dielectric constant of "between 4.8 and 5.4" and a "GM/CC of 6.86" substrate density were both new matter not described in the specification. Similarly, the Examiner also stated that claim 82's recital of a dielectric constant of "between 4.8 and 5.4" and a "GM/CC of 6.86" substrate density were also new matter. These rejections are hereby traversed.

It is respectfully submitted that claims 49 and 80-84, as amended, have been revised, corrected and clarified to recite dielectric constant and substrate density values for this invention's Sr_2YbSbO_6 single crystal substrates and buffer layers that are supported by the specification and do not constitute prohibited new matter. It is respectfully requested that the Examiner reconsider these rejections and that the claims, as amended, be allowed and pass to issue.

Claim 49, as amended, has been revised to recite a Sr_2YbSbO_6 thin film low dielectric constant of "between 4.1 and 16.3," which is adequately supported by specification page 3, lines 21-24, which states:

> The term "low dielectric constant," as used throughout this disclosure, is defined as any dielectric constant lower than 20, and, in this invention ranges from 5.1-16.3 in the bulk form and from 4.1-16.3 in the thin film form, within an experimental error of +/- 5 %.
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> (Emphasis Supplied)

Reciting the thin film low dielectric constant range of between 4.1 and 16.3 is adequately supported by specification page 3, lines 4-9, as follows:

...the aforementioned objects can be attained using a compound of the general formula Sr_2RESbO_6 where RE is a rare earth metal .... In the above formula, RE can be Lu, Yb, Tm, Er, Ho, Dy, Tb, La, Pr, Y Sm, Nd, Eu or Gd. These compounds can be used as barrier or buffer layers and substrates in thin film high critical temperature superconducting structures, as well as antennas and other devices ...(Emphasis Supplied)

Therefore, it is respectfully submitted that amending claim 49 to recite a low dielectric constant of between 4.1 and 16.3 based on the thin film definition of that term is adequately supported by the specification and does not constitute prohibited new matter.

Claim 49 has also been corrected to recite a Sr_2YbSbO_6 substrate density of 5.87 GM/CC, which is based on the specification page 4 TABLE I density value for that compound. It appears that the 6.86 substrate density was based on mistakenly transposing the immediately preceding Sr_2TmSbO_6 compound's 6.86 density. Similar conforming revisions, corrections and clarifications have also been made to the claim 82 dielectric constant and density values for this invention's superconducting insulator superconductor step edge Josephson junction with Sr_2YbSbO_6 single crystal buffer layers. Therefore, it is respectfully submitted that claims 49 and 80-84, as amended, have been revised, corrected and clarified to recite dielectric constant and substrate density values for this invention that are adequately supported by the specification and do not constitute prohibited new matter.

For these reasons, it is respectfully submitted that claims 49 and 80-84, as amended, have been revised, corrected and clarified to overcome and obviate the Examiner's objection to the specification and the 35 USC § 112 first and second paragraph rejections by correcting the buffer layer terminology and substituting dielectric constant and density values that are adequately supported by the specification without including prohibited new matter. Therefore, it is respectfully requested that the Examiner reconsider the objection and rejection and that the claims, as amended, be allowed and pass to issue.

Should the Examiner require further information, the Examiner is invited to telephone the Applicants' Attorney at the telephone number listed below.

Respectfully Submitted,

14 November 2007
DATE

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